October 26, 2004

SQN-TS-03-09 10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - UNITS 1 AND 2 - LICENSE AMENDMENT CHANGE NO. SQN-TS-03-09 - RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) (TAC NO. MB9513 AND MB9514)

Reference: TVA letter to NRC dated June 5, 2003, "Sequoyah Nuclear Plant (SQN) - Units 1 and 2 - Proposed License Amendment Request Change No. SQN-TS-03-09 - Updated Final Safety Analysis Report (UFSAR) Failure Modes and Effects Analysis (FMEA) – Use of Operator Action"

TVA submitted TS Change 03-09 to NRC in the referenced letter to propose a change to amend the design and licensing basis to identify that operator action may be necessary to ensure containment design pressure is not exceeded subsequent to a high energy line break such as a loss-of-coolant accident.

Subsequent discussions with NRC indicated that additional information regarding the proposed TS change was needed. Accordingly, the attached enclosure provides the responses to the additional questions.

There are no commitments contained in this letter. If you have any questions concerning this change, please contact me at (423) 843-7170 or J. D. Smith at (423) 843-6672.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 26th day of October, 2004.

Sincerely,

Original signed by

P. L. Pace
Manager of Licensing
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Enclosure
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ENCLOSURE

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2
DOCKET NOS. 327 AND 328

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI)
TECHNICAL SPECIFICATION (TS) CHANGE 03-09

RAI Question 1

Implementation of procedure EA-32-3, "Isolating Non-Essential Air to Containment," to isolate a Station Control and Service Air (SCSA) System leak is discussed on page E1-7 of the proposed license amendment request. Since EA-32-3 is not entered for the first 35 minutes, the sequence has only one hour and 25 minutes to be accomplished, not two hours. The first step is to cycle the breaker for Unit 1 outlet SCSA containment isolation valve located in the vital power board room (Elevation 734, Auxiliary Building). The NRC staff screens operator action times using ANSI/ANSI 58.8. In this case, ANSI/ANS 58.8 would suggest an absolute minimum of 36 minutes for this first action (30 minutes for action outside the control room plus minimum diagnosis and manipulation times). Please provide information that demonstrates (e.g., simulation results, operator test results) that all operating crews can successfully perform this action in the time allotted (15 minutes), including travel time.

Please provide information that demonstrates that all other actions in this sequence can be successfully accomplished within the allotted times, including travel time, by all operating crews.

Response

TVA has conducted timed walkthrough simulations on EA-32-3 with approximately two-thirds (39 of 56) of the on-shift non-licensed operators at Sequoyah. These simulations confirmed that the actions can be completed within the allotted times, including the time to communicate task assignments, to brief operators, and to travel to the required locations. The following summary is provided:

Cycling Breaker for SCSA Outboard Containment Isolation Valve

In accordance with TVA's proposed license amendment request, 15 minutes are allotted for this action. The 39 operators who performed the walkthrough simulation on this action completed the action in less than 12.5 minutes, with an average time of approximately 8 minutes. These times included allowances for the time for Main Control Room (MCR) operators to communicate the task assignment, travel time to the MCR, time for a briefing on the task, travel time from the MCR to the vital battery board room where the action is taken, and time to identify and open the circuit breaker.

Closing Manual Isolation Valves Upstream of the Outboard Containment Isolation Valve

In accordance with TVA's license amendment request, 20 minutes are allotted for this task. The 39 operators who performed the walkthrough simulation on this action completed the action in less than 16.5 minutes, with an average time of approximately 12 minutes. These times included allowances for the time for MCR operators to communicate the task assignment, time for a briefing on the task, travel time to the Auxiliary Building pipe chase where the valves are located, time to identify and operate the valve, and time for compliance with radiological precautions (such as obtaining an electronic dosimeter).

Depressurizing the Non-Essential Air Header

This task consists of two actions: completing a rapid shutdown on the non-accident unit and stopping the station air compressors. If non-essential air to containment cannot be confirmed to be isolated by the earlier steps, EA-32-3 requires operators to initiate the rapid shutdown on the non-accident unit at no later than 75 minutes from the start of the accident. Therefore, a maximum of 45 minutes is allowed to complete the two actions associated with this task (to ensure completion of the air header depressurization by the 2 hour time limit).

Thirty-five minutes are allotted to perform the rapid shutdown on the non-accident unit. This shutdown is performed from the MCR in accordance with abnormal operating procedure AOP-C.03 "Emergency Shutdown," which directs rapidly reducing power to

20 percent and then initiating a manual reactor trip. The following analysis of the time to complete this action is provided:

Time to brief crew on emergency shutdown	4 minutes
Time to perform shutdown at 4 percent/minute from 100 percent to 20 percent reactor power	20 minutes
Time to initiate reactor trip at 20 percent reactor power	1 minute
Total time to perform task:	25 minutes

The ability to perform a rapid shutdown using AOP-C.03 is demonstrated periodically during licensed operator training on the plant simulator. Operating crews are expected to be able to reduce reactor power from 100 percent to 20 percent at 5 percent per minute if required. Additionally, if sufficient time is not available to reduce power to 20 percent due to unexpected delays, EA-32-3 directs operators to simply initiate a manual reactor trip as necessary to meet the 2 hour time limit for depressurizing the air header. Timed scenarios documenting the ability to meet the 35 minute time allotment were not considered necessary based upon the following:

- This task is performed entirely from the MCR.
- At least a 10 minute margin is available.
- Performance of a rapid shutdown using abnormal operating procedures is a task periodically covered in operator simulator training.
- A backup action is available to simply insert a manual reactor trip at a higher power level if necessary to meet the timeline for air header depressurization.

The remaining action is to locally stop the control air compressors, with 10 minutes allotted. The 39 operators who performed the walkthrough simulation of this action completed this action in less than 10 minutes, with an average time of approximately 6.5 minutes. These times included allowances for the time for MCR operators to communicate the task assignment and travel time to the Turbine Building where the air-compressor controls are located. Briefing time was not included since EA-32-3 directs briefing the operator in advance while completing the shutdown on the non-accident unit.

The appendix in EA-32-3, which directs stopping the air compressors, also contains additional actions to isolate air receivers and to temporarily open vent paths to speed depressurization of air header. These actions were added as a prudent measure to ensure rapid depressurization of the header, but are not considered time-critical since the accident scenario which results in the limiting 2 hour time criterion involves an unisolated 1500 standard cubic feet per minute air leak inside containment.